

Claims

1. An articulating bathing and support device for an individual comprising:
 - a central support chassis comprising two articulating connector pairs joined by one or more lateral braces that can be variably sized to set the relative position of an anterior articulating connector to a posterior articulating connector within said articulating connector pair, each said posterior connector that may be independently rotatably positionable about a coplanar arc of movement, pivoting within said anterior articulating connector, each said anterior articulating connector that may be independently rotatably positionable about a coplanar arc of movement, pivoting within said anterior articulating connector;
 - a transverse brace rigidly joining said articulating connectors pairs;
 - a positioning stand for said central support chassis comprising an anterior chassis support frame and a posterior chassis support frame, said anterior chassis support frame connected to said anterior articulating connectors, said posterior chassis support frame connected to said posterior articulating connectors; and,
 - a head and thorax support frame connected to said posterior articulating connectors.

2. A device of claim 1 further comprising:
 - a lower extremity support frame connected to said anterior articulating connectors.

3. A device of claim 1 further comprising:
 - a drape of support material attached to and extending across said head and thorax support frame, said lower extremity support frame and a superior portion of said lateral braces to support the weight of said individual.

4. An articulating bathing and support device for an individual comprising:
 - a central support chassis comprising two articulating connector pairs joined by one or more lateral braces that can be variably sized to set the relative position of an anterior articulating connector to a posterior articulating connector within said articulating connector pair, each said articulating connector comprising a superior connecting member and an

inferior connecting member that are independently rotatably positionable about a coplanar arc of movement, pivoting within said anterior articulating connector;

a transverse brace rigidly joining said articulating connectors pairs;

a positioning stand for said central support chassis comprising an anterior chassis

10 support frame and a posterior chassis support frame, said anterior chassis support frame connected to said inferior connecting members of said anterior articulating connectors, said posterior chassis support frame connected to said inferior connecting members of said posterior articulating connectors;

15 a lower extremity support frame connected to said superior connecting members of said anterior articulating connectors;

a head and thorax support frame connected to said superior connecting members of said posterior articulating connectors; and,

20 a drape of support material attached to and extending across said head and thorax support frame, said lower extremity support frame and a superior portion of said lateral braces to support the weight of said individual.

5. A device of claim 4 wherein, said transverse brace is mounted between said anterior articulating connectors, perpendicular to a cylindrical axis of said lateral braces and said arc of movement, and rigidly fixes the position of said articulating pairs of articulating connectors with respect to one another.

6. A device of claim 4 wherein, said head and thorax support frame is connected to both superior connecting tubes on said posterior articulating connectors, and said head and thorax support frame is independently rotatably positionable about said arc of movement of said connecting tubes on said posterior articulating connectors.

7. A device of claim 4 wherein, one or more of said lateral braces, said lower extremity support frame, said head and thorax support frame, and said positioning stand are tubular members.

8. A device of claim 4 wherein, each said articulating connecting member further comprises:

a connecting tube, said connecting tube comprising, a semi-cylindrical articulating connecting receiver with a proximal pivot end fixed within said articulating connector and a
5 distal engagement end for receiving a member that articulates in a single plane arc of movement of less than 180 degrees that can be rigidly held at more than one point within said arc.

9. A device of claim 8 wherein, said anterior chassis support frame is connected to both inferior connecting tubes on said anterior articulating connectors and said posterior chassis support frame is connected to said both inferior connecting tubes of said posterior articulating connectors.

10. A device of claim 8 wherein, said anterior and posterior chassis support frames are independently rotatably positionable about said arc of movement of said connecting tubes.

11. A device of claim 8 wherein, said lower extremity support frame is connected to both superior connecting tubes on said anterior articulating connectors and said lower extremity support frame is independently rotatably positionable about said arc of movement of said connecting tubes on said anterior articulating connectors.

12. An articulating bathing and support device for an individual comprising:
a central support chassis comprising two articulating connector pairs;
each said articulating connector pair comprising an anterior and a posterior articulating connector, rigidly joined by one or more lateral braces, said lateral braces that
5 can be variably sized to set the relative position of said anterior articulating connector to said posterior articulating connector within said articulating connector pair;

each said articulating connector further comprising a superior and an inferior connecting tube, each said superior and inferior connecting tube comprising, a semi-cylindrical articulating connecting receiver with a proximal pivot end fixed within said
10 articulating connector and a distal engagement end for receiving a member that articulates in

a single plane arc of movement of less than 180 degrees that can be rigidly held at more than one point within said arc;

said transverse brace mounted between said anterior articulating connectors, perpendicular to a cylindrical axis of said lateral braces and said arc of movement, and
15 rigidly fixes the position of said articulating pairs of articulating connectors with respect to one another;

a positioning stand for said central support chassis comprising an anterior chassis support frame connected to said inferior connecting tubes on said anterior articulating connectors and a posterior chassis support frame connected to said connecting tubes of said
20 posterior articulating connectors, said anterior and posterior chassis support frames independently rotatably positionable about said arc of movement of said connecting tube;

a lower extremity support frame connected to said superior connecting tubes on said anterior articulating connectors, said lower extremity support frame independently rotatably positionable about said arc of movement of said connecting tubes on said anterior articulating
25 connectors;

a head and thorax support frame connected to said superior connecting tubes on said posterior articulating connectors, said head and thorax support frame independently rotatably positionable about said arc of movement of said connecting tubes on said posterior articulating connectors; and,

30 a drape of support material attached to and extending across said head and thorax support frame, said lower extremity support frame and a superior portion of said lateral braces to support the weight of said individual.

13. An articulating bathing and support chair custom fit to the anthropometric and functional needs of an individual comprising:

a central support chassis comprising two articulating connector pairs;
each said articulating connector pair comprising an anterior and a posterior
5 articulating connector, rigidly joined by one or more lateral braces, said lateral braces that position of said anterior articulating connector to said posterior articulating connector within said articulating connector pair;

a transverse brace rigidly joining said articulating connectors pairs;

a positioning stand connected to, and in support of said central support chassis
 10 comprising articulating anterior and posterior chassis support frames
 a lower extremity support connected to said anterior articulating connectors, said
 lower extremity support independently rotatably positionable about a pivot point within said
 anterior articulating connectors;
 a head and thorax support connected to said posterior articulating connectors, said
 15 head and thorax support independently rotatably positionable about a pivot point within said
 posterior articulating connectors;
 said central support chassis being customized to specific dimensions by sizing said
 lateral braces and said transverse brace of appropriate length and said head and thorax
 support, said lower extremity support and said chassis support frames sized to fit said central
 20 support chassis and specific dimensional needs of said individual.

14. A device of claim 13 wherein, said transverse brace is mounted between said anterior articulating connectors, perpendicular to a cylindrical axis of said lateral braces and said arc of movement, and rigidly fixes the position of said articulating pairs of articulating connectors with respect to one another.

15. A device of claim 13 wherein, said head and thorax support frame is connected to both superior connecting tubes on said posterior articulating connectors, and said head and thorax support frame is independently rotatably positionable about said arc of movement of said connecting tubes on said posterior articulating connectors.

16. A device of claim 13 wherein, one or more of said lateral braces, said lower extremity support frame, said head and thorax support frame, and said positioning stand are tubular members.

17. A device of claim 13 wherein, each said articulating connecting member further comprises:

 a connecting tube, said connecting tube comprising, a semi-cylindrical articulating connecting receiver with a proximal pivot end fixed within said articulating connector and a

5 distal engagement end for receiving a member that articulates in a single plane arc of movement of less than 180 degrees that can be rigidly held at more than one point within said arc.

18. A device of claim 17 wherein, said anterior chassis support frame is connected to both inferior connecting tubes on said anterior articulating connectors and said posterior chassis support frame is connected to said both inferior connecting tubes of said posterior articulating connectors.

19. A device of claim 17 wherein, said anterior and posterior chassis support frames are independently rotatably positionable about said arc of movement of said connecting tubes.

20. A device of claim 17 wherein, said lower extremity support frame is connected to both superior connecting tubes on said anterior articulating connectors and said lower extremity support frame is independently rotatably positionable about said arc of movement of said connecting tubes on said anterior articulating connectors.

21. An articulating bathing and support chair custom fit to the anthropometric and functional needs of an individual comprising:

a central support chassis comprising two articulating connector pairs;

each said articulating connector pair comprising an anterior and a posterior

5 articulating connector, rigidly joined by one or more lateral braces, said lateral braces that set the relative position of said anterior articulating connector to said posterior articulating connector within said articulating connector pair;

each said articulating connector further comprising a superior and an inferior connecting tube, each said superior and inferior connecting tube comprising, a semi-

10 cylindrical articulating connecting receiver with a proximal pivot end fixed within said articulating connector and a distal engagement end for receiving a member that articulates in a single plane arc of movement of less than 180 degrees that can be rigidly held at more than one point within said arc;

said transverse brace mounted between said anterior articulating connectors,
 15 perpendicular to a cylindrical axis of said lateral braces and said arc of movement, and
 rigidly fixes the position of said articulating pairs of articulating connectors with respect to
 one another;

a positioning stand for said central support chassis comprising an anterior chassis
 support frame connected to said inferior connecting tubes on said anterior articulating
 20 connectors and a posterior chassis support frame connected to said connecting tubes of said
 posterior articulating connectors, said anterior and posterior chassis support frames
 independently rotatably positionable about said arc of movement of said connecting tube;

a lower extremity support frame connected to said superior connecting tubes on said
 anterior articulating connectors, said lower extremity support frame independently rotatably
 25 positionable about said arc of movement of said connecting tubes on said anterior articulating
 connectors;

a head and thorax support frame connected to said superior connecting tubes on said
 posterior articulating connectors, said head and thorax support frame independently rotatably
 positionable about said arc of movement of said connecting tubes on said posterior
 30 articulating connectors;

a drape of support material attached to and extending across said head an thorax
 support frame, said lower extremity support frame and a superior portion of said lateral
 braces to support the weight of said individual;

said central support chassis being customized to specific dimensions by sizing said
 35 lateral braces and said transverse brace of appropriate length and said head and thorax
 support frame, said lower extremity support frame and said chassis support frames sized to fit
 said central support chassis and specific dimensional needs of said individual.

22. An articulating bathing and support device for an individual comprising:

a central support chassis means for forming a frame for said support device
 comprising two articulating connector pairs, each said articulating connector pair having an
 anterior and a posterior articulating connector;

5 a lateral brace means for rigidly joining and determining the relative position of said anterior articulating connector to said posterior articulating connector within said articulating connector pair;

a superior connecting tube means and an inferior connecting tube means on each said articulating connector that pivots at a proximal pivot end, fixed within said articulating
10 connector, and a distal engagement end for receiving a member that articulates in a single plane arc of movement of less than 180 degrees that can be rigidly held at more than one point within said arc;

a transverse brace means mounted between said anterior articulating connectors, perpendicular to a cylindrical axis of said lateral braces and said arc of movement, for rigidly
15 fixing the position of said articulating pairs of articulating connectors with respect to one another;

a positioning stand means to elevate and position said central support chassis means wherein an anterior chassis support frame connected to said inferior connecting tubes on said anterior articulating connectors and a posterior chassis support frame connected to said
20 connecting tubes of said posterior articulating connectors, said anterior and posterior chassis support frames independently rotatably positionable about said arc of movement of said connecting tube;

a lower extremity support frame means to elevate and position the lower extremities of said individual, said lower extremity support frame means connected to said superior
25 connecting tubes on said anterior articulating connectors, said lower extremity support frame means independently rotatably positionable about said arc of movement of said connecting tubes on said anterior articulating connectors;

a head and thorax support frame means to elevate and position the head and thorax of said individual, said lower head and thorax frame means connected to said superior
30 connecting tubes on said posterior articulating connectors, said head and thorax support frame means independently rotatably positionable about said arc of movement of said connecting tubes on said posterior articulating connectors; and,

a drape material supporting means attached to and extending across said head and thorax support frame, said lower extremity support frame and a superior portion of said
35 lateral braces for supporting the weight of said individual.

23. An articulating bathing and support device of claim 22 further comprising:

said central support chassis means that is customized to specific dimensions by sizing
said lateral brace means and said transverse brace means of appropriate length and said head
and thorax support frame means, said lower extremity support frame means and said chassis
support frames means sized to fit said central support chassis means for achieving specific
dimensional needs of said individual.

24. A method of customizing an articulating bathing and support device for variations in
anthropomology of an individual comprising the steps of:

providing a central support chassis comprising two articulating connector pairs;

determining a relative distance between an anterior articulating connector to a
posterior articulating connector within said central support chassis that is based upon said
anthropomology of said individual;

rigidly joining said anterior articulating connector to said posterior articulating
connector with at least one lateral brace of a length that is based upon said relative distance
between said anterior articulating connector to said posterior articulating connector to create
a left connector pair and a right connector pair;

determining a relative distance between said left connector pair and said right
connector pair within said central support chassis that is based upon said anthropomology of
said individual; and,

rigidly joining said left connector pair and said right connector pair with at least one
transverse brace of a length that is based upon said relative distance between said left
connector pair and said right connector pair.

25. A method of claim 24 further comprising the step of:

providing a positioning stand for said central support chassis comprising an anterior
chassis support frame and a posterior chassis support frame, said anterior chassis support
frame connected to anterior articulating connectors, said posterior chassis support frame
connected to said posterior articulating connectors.

26. A method of claim 24 further comprising the step of:
providing a head and thorax support frame connected to said posterior articulating connectors.

27. A method of claim 24 further comprising the step of:
providing a lower extremity support frame connected to said anterior articulating connectors.

28. A method of customizing an articulating bathing and support device for variations in anthropomology of an individual comprising the steps of:

providing a central support chassis comprising two articulating connector pairs, each joined by at least one lateral brace connecting an anterior articulating connector to a posterior articulating connector within said articulating connector pair to form a left connector pair and a right connector pair, each said posterior connector comprising a superior connecting member and an inferior connecting member pivoting within said anterior articulating connector, each said anterior articulating connector comprising an inferior connecting member pivoting within said anterior articulating connector;

fixing the relative distance between said left connector pair and said right connector pair with at least one transverse brace rigidly joining said left connector pair to said right connector pair;

dimensioning said central support chassis by:

fixing the relative distance between said anterior articulating connector pair and said posterior connecting pair by utilizing at least one said lateral brace of a length that is based upon said anthropomology of said individual;

fixing the relative distance between said left connector pair and said right connector pair by utilizing at least one transverse brace of a length that is based upon said anthropomology of said individual; and,

providing a positioning stand for said central support chassis comprising an anterior chassis support frame and a posterior chassis support frame, said anterior chassis support frame connected to said inferior connecting members of said anterior articulating connectors,

said posterior chassis support frame connected to said inferior connecting members of said posterior articulating connectors;

25 dimensioning said posterior chassis support frame and said anterior chassis support frame based upon said anthropomology of said individual;

 providing a head and thorax support frame connected to said superior connecting members of said posterior articulating connectors;

 dimensioning said head and thorax support based upon said anthropomology of said
30 individual.

29. A method of reconfiguring the structural components of a customized articulating bathing and support device for changes in anthropomology of an individual comprising the steps of:

 providing a central support chassis comprising two articulating connector pairs, each
5 said articulating connector pair comprising an anterior articulating connector rigidly joined to a posterior articulating connector to create a left connector pair and a right connector pair, said left connector pair rigidly joined to and said right connector pair with at least one transverse brace;

 reconfiguring a central support chassis by:

10 evaluating the relative distance between said anterior articulating connector pair and said posterior connecting pair based upon said changes in anthropomology of said individual;

 replacing at least one said lateral brace as necessary, based upon said changes in anthropomology of said individual;

15 evaluating the relative distance between said left connector pair and said right connector pair based upon said changes in anthropomology of said individual; and,

 replacing at least one said transverse brace as necessary, based upon said changes in anthropomology of said individual.

30. A method of claim 29 further comprising the step of:

 providing a positioning stand for said central support chassis comprising an anterior chassis support frame and a posterior chassis support frame, said anterior chassis support

frame connected to anterior articulating connectors, said posterior chassis support frame
5 connected to said posterior articulating connectors.

31. A method of claim 29 further comprising the step of:
providing a head and thorax support frame connected to said posterior articulating
connectors.

32. A method of claim 29 further comprising the step of:
providing a lower extremity support frame connected to said anterior articulating
connectors.

33. A method of reconfiguring the structural components of a customized articulating
bathing and support device for changes in anthropomology of an individual comprising the
steps of:

providing a central support chassis comprising two articulating connector pairs, each
5 joined by at least one lateral brace connecting an anterior articulating connector to a posterior
articulating connector within said articulating connector pair to form a left connector pair and
a right connector pair, each said posterior connector comprising a superior connecting
member and an inferior connecting member pivoting within said anterior articulating
connector, each said anterior articulating connector comprising an inferior connecting
10 member pivoting within said anterior articulating connector;

fixing the relative distance between said left connector pair and said right connector
pair with at least one transverse brace rigidly joining said left connector pair to said right
connector pair;

reconfiguring said central support chassis by:
15 evaluating the relative distance between said anterior articulating connector
pair and said posterior connecting pair based upon said changes in anthropomology of
said individual;

replacing at least one said lateral brace as necessary, based upon said changes
in anthropomology of said individual;

20 evaluating the relative distance between said left connector pair and said right
connector pair based upon said changes in anthropomology of said individual;
 replacing at least one said transverse brace as necessary, based upon said
changes in anthropomology of said individual;
 providing a positioning stand for said central support chassis comprising an anterior
25 chassis support frame and a posterior chassis support frame, said anterior chassis support
frame connected to said inferior connecting members of said anterior articulating connectors,
said posterior chassis support frame connected to said inferior connecting members of said
posterior articulating connectors;
 evaluating the dimensions of said posterior chassis support frame and said anterior
30 chassis support frame based upon said changes in anthropomology of said individual;
 replacing said posterior chassis support frame and said anterior chassis support frame
as necessary, based upon said changes in anthropomology of said individual;
 providing a head and thorax support frame connected to said superior connecting
members of said posterior articulating connectors;
35 evaluating the dimensions of said head and thorax support based upon said changes in
anthropomology of said individual; and,
 replacing said head and thorax support as necessary, based upon said changes in
anthropomology of said individual.

34. An articulating bathing and support device for an individual comprising:
 a central support chassis comprising two connector pairs joined by one or more lateral
braces that can be variably sized to set the relative position of an anterior connector to a
posterior articulating connector within said connector pair, each said posterior connector that
5 may be independently rotatably positionable about a coplanar arc of movement, pivoting
within said anterior articulating connector, a transverse brace rigidly joining said articulating
connectors pairs;
 a positioning stand for said central support chassis comprising an anterior chassis
support frame and a posterior chassis support frame, said anterior chassis support frame
10 connected to said anterior articulating connectors, said posterior chassis support frame
connected to said posterior articulating connectors; and,

a head and thorax support frame connected to said posterior articulating connectors.